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CONSIDERATIONS REGARDING EXTRATERRITORIAL JURISDICTION IN THE ALASKA PENINSULA/ALEUTIAN ISLANDS COMMERCIAL SALMON FISHERIES

A STAFF REPORT TO THE FEDERAL SUBSISTENCE BOARD

Issue Statement

In response to regulations passed in February 2004 by the Alaska Board of Fisheries, petitions have been received by the Federal subsistence management program, which will be summarized by staff for the Federal Subsistence Board separately from this report. These petitions request Federal assertion of extraterritorial jurisdiction to regulate the South Unimak and Shumagin Islands June commercial salmon fishery (known as the Area M June fishery). The petitioners state that this action is necessary to protect the subsistence priority for sockeye salmon in the Bristol Bay Area and for chum salmon in the Kuskokwim and Yukon Areas. Attached maps provide reference to these locations, and to the location of Federal public lands in Alaska.

As justification for their requests, the petitioners note that the Alaska Board of Fisheries action will impact salmon escapements and subsistence harvests in the Bristol Bay and Arctic-Yukon-Kuskokwim regions. They note that some of the stocks in these areas have been designated stocks of concern by the Alaska Board of Fisheries, that there have been declines in recent years, and that subsistence users have already been restricted and regulated in their fisheries. The petitioners also express concerns for impacts to Norton Sound salmon stocks, coho salmon, and other related issues.

This report will focus on an evaluation of the recent Area M June fishery regulatory changes by the Alaska Board of Fisheries in relation to provision of the subsistence priority on Federal public lands for sockeye salmon in the Bristol Bay Area, and for chum salmon in the Kuksokwim and Yukon Areas. The additional issues raised by the petitioners are addressed in Appendix I to this report. While the Alaska Board of Fisheries considers regulation changes on a three-year review cycle, this report focuses on the 2004 season, as that is the immediate situation at hand, and looking out more than one year would be increasingly speculative.

Background

The Area M June fishery targets sockeye salmon bound predominantly for Bristol Bay, but chum salmon are harvested incidentally. The Area M June fishery harvests a broad mixture of chum salmon stocks from throughout the North Pacific, including stocks from Asia. Yukon Area fall chum salmon were found by Seeb, Crane, and Debevec (1997) to be a small component or absent in catch samples collected from the Area M June fishery in a 1993-1996 genetics study. Therefore, only summer chum salmon will be addressed for the Yukon Area.

Regulation of the Area M June fishery has long been highly contentious due in large part to the interception of salmon bound for other areas. Allocation and conservation issues have been involved at various times over the years. Debates regarding the effect of this fishery on those stocks have been a feature of the State regulatory process. Socio-economic differences between the Area M June fishery and fisheries in the terminal areas contribute to the intensity of the controversy surrounding interceptions in this fishery. Within the terminal areas, there are also allocation and conservation issues of a more local character, involving districts and user groups; for example, in Bristol Bay, in Kuskokwim Bay, and along the Kuskokwim and Yukon Rivers.

Recent declines in runs of sockeye salmon to the Kvichak River system in Bristol Bay, and longer-term and more broadly of chum salmon to systems in the Arctic-Yukon-Kuskokwim Region, have exacerbated the situation. Fishery restrictions, including on subsistence fisheries in some areas, and escapement shortfalls to some spawning areas have occurred in terminal areas. It has been widely speculated that changes in climate and the ocean environment have been a key factor in these downturns in salmon productivity (Kruse 1998). Such declines make management and allocation decisions more difficult. Kvichak River sockeye salmon have been designated as a stock of yield concern by the Alaska Board of Fisheries (Bristol Bay Staff 2003), while Kuskokwim River chum salmon have been designated a stock of yield concern (Bergstrom and Whitmore 2004) and Yukon River summer chum salmon a stock of management concern (Salomone and Bergstrom 2004). These latter two will be discussed in more detail in a later section of this report.

The Alaska Board of Fisheries is charged with sustainable management of the salmon resources and allocating harvests among competing users in State-managed fisheries, although subsistence is the priority consumptive use under both State and Federal management. The Federal subsistence management program is charged to provide for the subsistence priority on Federal public lands consistent with the maintenance of healthy fish and wildlife populations.

It is clear that there are strong opposing views regarding the consequences and appropriateness of the actions of the Alaska Board of Fisheries liberalizing regulations in the Area M June fishery. However, it is not the role of the Federal subsistence management program to arbitrate these disputes. The Federal mandate, under ANILCA

and other applicable law, is to provide for a subsistence priority on Federal public lands and associated waters.

Area M June Fishery Regulatory History

The Area M June fishery has undergone frequent and intensive regulatory review by the Alaska Board of Fisheries over the past several decades. Many different management tools have been employed in the fishery, including harvest allocation quotas, harvest ceilings or caps, time, area, and gear restrictions. Appendix II provides a tabular chronology of regulation changes in the Area M June fishery from 1962 through 2003, adapted from Shaul (2003).

In 2001, the Alaska Board of Fisheries removed the chum salmon harvest cap that had been in place as a control on chum salmon harvest in the Area M June fishery, but substantially reduced fishing time to the lowest levels ever. Harvest in the Area M June fishery in 2001 was further affected by a fishermen's strike. However, absent a fishermen's strike in 2002 and 2003, harvests averaged 522,000 sockeye and 331,000 chum salmon, both of which were below the 1990-2000 averages of 1,679,000 sockeye and 435,000 chum salmon (Shaul 2003).

In 2004, the Alaska Board of Fisheries substantially liberalized fishing time in the Area M June fishery. The regulations in place from 2001 to 2003 limited the Area M June fishery purse seine and drift gill net fleets to a total open fishing time of nine 16-hour days, totaling 144 hours. The new regulations will provide for four 88-hour and one 64-hour open fishing periods, totaling 416 hours, which is 2.9 times greater than the prior number of hours. However, such a comparison ignores the set gill net fishery and night-time fishing. By virtue of a complicated set of restrictions, based upon daily sockeye-to-chum salmon catch ratios, the set gill net fishery was allowed an average of 184 hours of fishing time in the South Unimak portion and 150 hours in the Shumagin Islands portion of the Area M June fishery for the years 2002 and 2003 (discounting 2001 because of the fishermen's strike). Thus, the increase for set gill net gear is not as large. Also, the new regulations will include fourteen nights, whereas the previous regulations included no night-time hours. The effectiveness of fishing during night-time is dramatically reduced, especially for purse seine gear (Mecum, pers. comm. 2004).

Application of Federal Regulations

The authority to restrict fishing activities which occur on lands or waters other than Federal public lands derives from the Property Clause of the U.S. Constitution, the statutes and executive orders establishing and administering the various Federal areas, and subsequent judicial interpretations. A Federal reservation includes more than just the Federal lands and waters; it includes the authority to protect the purposes identified by Congress in establishing the reservation.

Title VIII of the Alaska National Interest Lands Conservation Act of 1980 sets forth the authority for a preference for a subsistence opportunity on Federal public lands in Alaska.

> *§802. It is hereby declared to be the policy of Congress that--*
>
> *(1) consistent with sound management principles, and the conservation of healthy populations of fish and wildlife, the utilization of the public lands in Alaska is to cause the least adverse impact possible on rural residents who depend upon subsistence uses of the resources of such lands; consistent with management of fish and wildlife in accordance with recognized scientific principles and the purposes for each unit established, designated, or expanded by or pursuant to Titles II through VII of this Act, the purpose of this title is to provide the opportunity for rural residents engaged in a subsistence way of life to do so;*
>
> *(2) nonwasteful subsistence uses of fish and wildlife and other renewable resources shall be the priority consumptive uses of all such resources on the public lands of Alaska when it is necessary to restrict taking in order to assure the continued viability of a fish or wildlife population or the continuation of subsistence uses of such population, the taking of such population for nonwasteful subsistence uses shall be given preference on the public lands over other consumptive uses; ....*
>
> *§814. The Secretary shall prescribe such regulations as are necessary and appropriate to carry out his responsibilities under this title.*

This ANILCA mandate is implemented through the Federal Subsistence Management regulations found at 50 CFR 100 and 36 CFR 242. The Secretaries of the Interior and Agriculture have retained the authority to protect the purposes for which the various land units were established by regulating off the public lands if necessary. Relative to subsistence, this authority is delineated at §___.10(a).

> *The Secretaries, however, retain their existing authority to restrict or eliminate hunting, fishing, or trapping activities which occur on lands or waters in Alaska other than public lands when such activities interfere with subsistence hunting, fishing, or trapping on the public lands to such an extent as to result in a failure to provide the subsistence priority.*

The Federal Subsistence Board also has a role leading up to a Secretarial decision. It is found at §___.10(d)(4)(xvii):

> *(4) The Board is empowered, to the extent necessary, to implement Title VIII of ANILCA, to:*
> *(xvii) Evaluate whether hunting, fishing, or trapping activities which occur on lands or waters in Alaska other than public lands interfere with subsistence hunting, fishing, or trapping on the public lands to such an extent as to result in a failure to provide the subsistence priority, and after appropriate consultation with*

the State of Alaska, the Regional Councils, and other Federal agencies, make a recommendation to the Secretaries for their action;

The authority of the public to petition the Secretaries is found at 7 CFR 1.28 and 43 CFR 14.

Information Review

While regulations that provide an increased commercial salmon harvest in the Area M June fishery are a reallocation of fish from other fisheries, such reallocations among State-managed fisheries are not in themselves the issue to be addressed here. The central issue is whether the increased harvest in the Area M June fishery is expected to be the direct cause of a failure to provide the subsistence priority on Federal public lands. To address this, we need to briefly review information on the increase in harvest expected due to the regulation changes by the Alaska Board of Fisheries in the Area M June fishery, the stock composition of that harvest, and the run forecast or outlook in the terminal areas at issue.

The Alaska Department of Fish and Game is not able to estimate precisely what increases in harvests would occur with specific increases in open fishing time in the Area M June fishery, but rough calculations suggest that an increase in effective fishing time would result in roughly proportional increases in both sockeye and chum harvests. But, recognizing that there is a difference in night-time fishing, and that the increase in set gill net allowable fishing time is not as great as that for purse seine and drift gill net gear, ADF&G has qualitatively characterized the result of the actions by the Alaska Board of Fisheries as roughly doubling the fishing time in the Area M June fishery (Mecum, pers. comm. 2004).

A doubled sockeye salmon harvest in the Area M June fishery from the 2002-2003 level of 522,000 sockeye would equate to a total harvest of 1,044,000 sockeye salmon. A doubled chum salmon harvest in the Area M June fishery from the 2002-2003 level of 331,000 chum salmon would equate to a total harvest of 662,000 chum salmon. It is of interest to consider, in a historical perspective, the relative harvest level of sockeye and chum salmon that results from these expansions. Shaul (2003) provides Area M June fishery harvest information dating back to 1970. That information indicates that a harvest of 1,044,000 sockeye salmon in 2004 would be most similar to the level taken in 1996, when 1,029,000 sockeye salmon were harvested; however, in 1996 the chum salmon harvest was only 360,000 fish. Conversely, a harvest level of 662,000 chum salmon in 2004 would be most similar to the level taken in 1994, when 582,000 chum salmon were harvested; however, in 1994 the sockeye salmon harvest was 1,461,000 fish.

Sockeye salmon harvested in the Area M June fishery are predominantly of Bristol Bay origin (Eggers, Rowell, and Barrett 1991). Plotnick and Eggers (2004) reported a return forecast in January 2004, prior to the regulation changes in the Area M June fishery, of 46.6 million Bristol Bay sockeye salmon for 2004, 31% higher than the prior 10-year

average. They report that all systems are expected to exceed their spawning escapement goals. An 80% confidence range of 36 to 58 million sockeye salmon for the 2004 return point estimate was constructed based on deviations of actual returns from forecasted levels for 1999 through 2003. A commercial harvest of 34.7 million sockeye salmon is forecasted for the Bristol Bay Area, which would be about 60% higher than the previous 10-year average.

Subsistence harvest averaged 122,000 sockeye salmon annually in the Bristol Bay Area during the 1990-1999 period (ADF&G 2001). Based on community of residence data for 1999, it is likely that less than 20% of this subsistence harvest is taken within Federal subsistence fishery jurisdiction. To date, there have been no restrictions to the sockeye salmon subsistence fisheries in the Bristol Bay Area.

Seeb, Crane, and Debevec (1997) found that a large complex of genetically similar chum salmon stocks they termed the "Northwest Alaska Summer" group accounted for 38% to 60% of samples from the Area M June fishery during a 1993-1996 genetic stock identification study. This grouping included chum salmon stocks from the Noatak and Kobuk Rivers near Kotzebue, from Norton Sound, the Yukon River summer run, Kuskokwim River and Bay, Bristol Bay, and the North Alaska Peninsula. Without a stock identification study active in the year of interest, we can only speculate as to what the stock composition of the harvest increase will be in 2004. If the harvest increase of 331,000 chums was composed of between 38% and 60% "Northwest Alaska Summer" stocks, that would equate to a harvest increase of about 126,000 to 199,000 chum salmon of that stock grouping.

However, Kuskokwim Area chum salmon and Yukon Area summer chum salmon are themselves only components of the "Northwest Alaska Summer" stock group. Stocks from the Noatak and Kobuk Rivers near Kotzebue, from Norton Sound, Bristol Bay, and the North Alaska Peninsula would also be part of that estimated 126,000 to 199,000 chum salmon harvest increase attributed to "Northwest Alaska Summer" origin. This means that the harvest increase on Kuskokwim Area chum salmon, and on Yukon Area summer chum salmon, would each be only a component of the estimated 126,000 to 199,000 chum salmon harvest increase. At the current time, there is no reliable information available to identify the percentage of the chum salmon harvest that would be attributed to Kuskokwim Area chum salmon or Yukon Area summer chum salmon.

Although formal run forecasts are not conducted for chum salmon in the Kuskokwim Area or for summer chum salmon in the Yukon Area, a more qualitative commercial harvest outlook is developed. Plotnick and Eggers (2004) reported a commercial harvest outlook, prior to the regulation changes in the Area M June fishery, for the Kuskokwim Area of 175,000 to 350,000 chum salmon (150,000 to 300,000 in the Kuskokwim River and 25,000 to 50,000 in Kuskokwim Bay) and for the Yukon Area of 50,000 to 150,000 summer chum salmon. These outlooks are of the number of chum salmon anticipated to be available for commercial harvest in the Kuskokwim and Yukon Areas, above and beyond providing for spawning escapements and subsistence uses. However, these outlooks do not take into account commercial market interest in buying chum salmon.

Commercial market conditions are considered extremely poor for chum salmon in the Kuskokwim River (Bergstrom and Whitmore 2004), and poor for summer chum salmon in the Yukon River (Salomone and Bergstrom 2004). Most of the commercial salmon harvest in the Kuskokwim and Yukon Rivers occurs in Federal subsistence management jurisdiction.

Kuskokwim River Chum and Yukon River Summer Chum Salmon Concerns

Declines in salmon productivity throughout Western Alaska in the late 1990s caused significant reductions in both subsistence and commercial opportunities leading to economic disaster declarations, and shortfalls in meeting spawning escapement objectives for specific tributary systems. In September 2000, the Alaska Board of Fisheries initiated important steps to address salmon conservation problems in these areas following guidelines set out in the State's *Sustainable Salmon Fisheries Policy*. In January 2001, Kuskokwim River chum salmon were designated as a stock of yield concern, and Yukon River summer chum salmon were designated as a stock of management concern (Bergstrom and Whitmore 2004; Salomone and Bergstrom 2004).

These designations led to a series of more conservative harvest management strategies for both commercial and subsistence fisheries in both river systems. Most significant to the subsistence fisheries are the "windowed" fishing schedules for fish wheels and salmon gill nets, whereby subsistence fishing is no longer open seven days per week (absent commercial openings) and in many lower river areas has been reduced to about four days per week. While the subsistence schedule disrupted traditional fishing practices in some areas, it helped spread harvest more evenly throughout the run and provided better fishing opportunity for upriver subsistence users. It is important to note that managers currently implement the subsistence schedule chronologically based on migratory timing of the run and may alter the schedule if run indicators support such actions, including removing the schedule when the run is assessed to be of sufficient magnitude.

In 1999 and 2000, Kuskokwim River chum salmon escapements were below average. However, the situation has been improving, with spawning escapements having been average or better from 2001 to 2003 (Bergstrom and Whitmore 2004). Subsistence harvests of chum salmon in the Kuskokwim River have also improved in recent years, with the subsistence harvest estimates of 77,000 chum salmon in 2002 and 75,000 (preliminary) in 2003 (Bergstrom and Whitmore 2004) being in the range of harvest levels of the prior ten-year period. Run strength assessment in 2002 and 2003 indicated a harvestable surplus of chum salmon in the Kuskokwim River; however, lack of markets impacted commercial harvest opportunities. Kuskokwim River chum salmon remain designated as a stock of yield concern.

Productivity has been a more chronic problem for Yukon River summer chum salmon than it has been for chum salmon in the Kuskokwim River. The Anvik River biological escapement goal (BEG; 400,000-800,000 summer chum salmon) was not met in 2000, 2001, or 2003, nor was the East Fork Andreafsky River BEG (65,000-135,000 summer

chum salmon) met during the past five years, except in 2001, which was undetermined due to high water (Salomone and Bergstrom 2004), even though parent-year escapements in these systems were generally at or above goal levels. Review of the escapement goals led to no recommended change for the East Fork Andreafsky River, but a recommended lowering of the goal for the Anvik River, to a range of 350,000-700,000 summer chum salmon (Salomone and Bergstrom 2004). Subsistence harvests of Yukon River summer chum salmon have declined, particularly in the last five years, with 1999-2003 harvests averaging 70,000 summer chum salmon annually, while the 1994-1998 average was 107,000 summer chum salmon annually (Salomone and Bergstrom 2004).

Commercial harvest of summer chum salmon has been very limited in recent years. Since 1998, the only commercial summer chum salmon harvests in the Yukon River drainage have been incidental to commercial fisheries directed at chinook salmon, except in the Tanana River, where a small terminal harvest occurred in 2002 and 2003. Overall, inriver run strength assessments for 2002 and 2003 indicated a harvestable surplus of Yukon River summer chum salmon of sufficient size to implement a commercial fishery; however, lack of a commercial market precluded a directed harvest on the Yukon River (Salomone and Bergstrom 2004). Yukon River summer chum salmon remain designated as a stock of management concern.

A substantial portion of the subsistence harvest of chum salmon in the Kuskokwim River, and of summer chum salmon in the Yukon River, is likely taken within Federal subsistence fishery jurisdiction, given the extent and location of that jurisdiction in those river systems.

Will There Be a Failure to Provide the Subsistence Priority As a Direct Consequence of the Regulation Changes in the Area M June Fishery?

In approaching the central consideration of whether the Federal subsistence management program anticipates a failure to provide the subsistence priority on Federal public lands as a direct consequence of the changes in regulations for the Area M June fishery, a series of threshold questions will be addressed. In addressing these questions, it will be necessary to consider the expected increase in harvest in the Area M June fishery as a result of the regulation changes by the Alaska Board of Fisheries, the stock composition of that harvest, and the forecast or outlook for the salmon returns. Qualifications of the information, and relative confidence in the evaluations, are discussed in the subsequent section of this report.

A: Prior to the Alaska Board of Fisheries liberalizing the Area M June fishery in February 2004, did we anticipate a failure to provide the subsistence priority for sockeye salmon on Federal public lands in the Bristol Bay Area in 2004? For chum salmon on Federal public lands in the Kuskokwim Area in 2004? For summer chum salmon on Federal public lands in the Yukon Area in 2004?

Prior to the Alaska Board of Fisheries liberalizing regulations for the Area M June fishery in February 2004, we did not anticipate a failure to provide the subsistence priority for sockeye salmon on Federal public lands in the Bristol Bay Area in 2004, for chum salmon on Federal public lands in the Kuskokwim Area in 2004, or for summer chum salmon on Federal public lands in the Yukon Area in 2004.

At its December 2003 meeting, the Federal Subsistence Board did not impose additional restrictions on fisheries in the Bristol Bay Area to protect the subsistence priority for sockeye salmon, in the Kuksokwim Area to protect the subsistence priority for chum salmon, or in the Yukon Area to protect the subsistence priority for summer chum salmon.

At its December 2003 and January 2004 meetings, the Alaska Board of Fisheries did not impose additional restrictions on the sockeye salmon fisheries in the Bristol Bay Area, the chum salmon fisheries in the Kuksokwim Area, or the summer chum salmon fisheries in the Yukon Area. In fact, the Alaska Board of Fisheries expanded harvest areas in the Bristol Bay Area to expand commercial harvest opportunity for what is expected to be a large return of sockeye salmon.

B: Would a doubled sockeye salmon harvest in the Area M June fishery pose a likely failure to provide the subsistence priority for sockeye salmon on Federal public lands in the Bristol Bay Area in 2004?

A doubled sockeye salmon harvest in the Area M June fishery from the 2002-2003 level of 522,000 sockeye would equate to a total harvest of 1,044,000 sockeye, which would still be well below the 1990-2000 average harvest of 1,679,000 sockeye in that fishery. Considering this, and the forecast for a return 31% larger than the prior 10-year average, it does not appear likely that the change in regulations in the Area M June fishery will result in a failure to provide the subsistence priority for sockeye salmon on Federal public lands in the Bristol Bay Area. Sockeye salmon harvested in the Area M June fishery are predominantly of Bristol Bay origin.

C: Would a doubled chum salmon harvest in the Area M June fishery pose a likely failure to provide the subsistence priority for chum salmon on Federal public lands in the Kuskokwim Area in 2004?

A doubled chum salmon harvest in the Area M June fishery from the 2002-2003 level of 331,000 chum would equate to a total harvest of 662,000 chum, which would be above the 1990-2000 average harvest of 435,000 chum salmon in that fishery, and second only to the 1991 harvest of 773,000 chums during the 1990-2003 period (Shaul 2003). However, Kuskokwim Area chum salmon are only a component of the "Northwest Alaska Summer" stock group, which itself comprises a component of the Area M June fishery harvest of chum salmon. As noted above, applying historical stock identification information, we would anticipate an estimated 126,000 to 199,000 chum salmon of

"Northwest Alaska Summer" origin to contribute to the harvest increase of 331,000 chum salmon. Kuskokwim Area chum salmon would be a component of that estimated 126,000 to 199,000 chum harvest increase. Considering this, and that the run of chum salmon to the Kuskokwim Area was anticipated to provide for a terminal area commercial harvest of 175,000 to 350,000 chum salmon, in addition to spawning escapement needs and subsistence uses, it does not appear likely that the change in regulations in the Area M June fishery will result in a failure to provide the subsistence priority for chum salmon on Federal public lands in the Kuskokwim Area.

D: Would a doubled chum salmon harvest in the Area M June fishery pose a likely failure to provide the subsistence priority for summer chum salmon on Federal public lands in the Yukon Area in 2004?

A doubled chum salmon harvest in the Area M June fishery from the 2002-2003 level of 331,000 chum would equate to a total harvest of 662,000 chum, which would be above the 1990-2000 average harvest of 435,000 chum salmon in that fishery, and second only to the 1991 harvest of 773,000 chums during the 1990-2003 period (Shaul 2003). However, Yukon Area summer chum salmon are only a component of the "Northwest Alaska Summer" stock group, which itself comprises a component of the Area M June fishery harvest of chum salmon. As noted above, applying historical stock identification information, we would anticipate an estimated 126,000 to 199,000 chum salmon of "Northwest Alaska Summer" origin to contribute to the harvest increase of 331,000 chum salmon. Yukon Area summer chum salmon would be a component of that estimated 126,000 to 199,000 chum harvest increase. Considering this, and that the run of summer chum salmon to the Yukon Area was anticipated to provide for a terminal area commercial harvest of 50,000 to 150,000 summer chum salmon, in addition to spawning escapement needs and subsistence uses, it does not appear likely that the change in regulations in the Area M June fishery will result in a failure to provide the subsistence priority for summer chum salmon on Federal public lands in the Yukon Area.

Qualifications of the Information

It should be understood that information addressing these issues is of varying quality and confidence, only some of which is quantified in a statistical manner. While making use of the best available data, often in terms of averages or point estimates, it is important to keep in mind that there is inherent variability, and that needed information may not be directly available. We are often left evaluating potential impacts by applying qualitative information, or estimates from historical periods as a proxy for future events. A few examples of such considerations will be described here.

The amount of the harvest increase that will occur in the Area M June fishery due to the recent regulation changes by the Alaska Board of Fisheries is speculative at this point in time. In this report we have incorporated the ADF&G best estimate of a doubling factor. The increase in fishing time to be allowed for purse seine and drift gillnet gear is a factor

of 2.9, but that includes night-time hours, when effectiveness is greatly reduced. Absent experience with the fishery operating under the new regulations, the ADF&G assessment represents the best available information. That being said, if a factor of 2.9 were used, and all other assumptions remained unchanged, the harvest of chum salmon of the "Northwest Alaska Summer" stock group that one would estimate as due to the change in regulations would be 239,000 to 377,000 fish, instead of the estimate of 126,000 to 199,000 fish used in this report. Given previously noted considerations, an expansion factor of 2.9 would be expected to generate an overestimate of chum salmon harvest, and its use is therefore not advised.

We have no way of knowing in advance what the stock composition of the harvest increase will be in the Area M June fishery. No stock identification studies are planned for the fishery this year, so we will not have estimates of stock composition even after the fishing season is concluded. The degree to which a historical range represents the coming season is unknown. Further, even in the years of study in the 1990s, the resolution of the stock composition estimates resulted in a large grouping of chum salmon stocks ranging from the North Alaska Peninsula to Kotzebue. The contribution of stocks at the individual management area or spawning stream level within this grouping is not known.

There is the potential for further uncertainty being introduced to expectations of harvest levels or stock composition by the abundance of sockeye and chum salmon migrating through the Area M June fishery. It is not feasible to reliably model these interaction effects under the new regulations, given the lack of historical information for fisheries conducted under this regulatory regime.

Sockeye salmon return forecasts for the Bristol Bay Area are quantitative in character, and the numerical forecasts and post-season accounting of run strength contributes to direct assessments of reliability. For the Kuskokwim and Yukon Areas, salmon return outlooks are of a qualitative character, as are post-season overall run assessments. This means that a rigorous accounting of run strength is unavailable.

Given these considerations, and the levels of run sizes anticipated, there is more uncertainty associated with the assessments made in this report for Kuskokwim Area chum salmon and for Yukon Area summer chum salmon than there is for Bristol Bay sockeye salmon. Put another way, considering the quality of available information and the anticipated abundances of the returns, the level of confidence in providing for the subsistence priority on Federal public lands is greatest for Bristol Bay sockeye salmon, followed by Kuskokwim Area chum salmon, and then by Yukon Area summer chum salmon.

Are There Alternative Remedies Under Federal Subsistence Board Authority?

The Federal Subsistence Board has the authority to close Federal public lands to other uses to provide for the subsistence priority. If there remains any significant concern that

there may be a failure to provide the subsistence priority for sockeye salmon on Federal public lands in the Bristol Bay Area, for chum salmon on Federal public lands in the Kuskokwim Area, or for summer chum salmon on Federal public lands in the Yukon Area, exercise of this authority would be a potential remedy under the authority of the Federal Subsistence Board. This authority has been further delegated to the local Federal subsistence fishery managers.

Are There Alternative Ways That Extraterritorial Jurisdiction Could Be Implemented?

If all other management approaches are determined to be insufficient to provide the subsistence priority, and exercise of extraterritorial jurisdiction is under consideration, the Secretaries may want to examine interceptions of these fish throughout their range, in addition to, or instead of, the petitioners' recommended action in the Area M June fishery.

In Summary

The exercise of extraterritorial jurisdiction by the Federal government requires meeting a very high threshold for justification. The Alaska Board of Fisheries is charged with sustainable management of the salmon resources and allocating harvests among competing users in State-managed fisheries, with subsistence being the priority consumptive use. Management of the Area M June fishery falls within the authority of the State of Alaska.

Limitations of available information make it difficult to reliably anticipate in advance the outcome of regulation changes in the Area M June fishery. However, making reasonable use of the best available information, there does not appear to be a high likelihood of a failure to provide the subsistence priority on Federal public lands in 2004 for sockeye salmon in the Bristol Bay Area, for chum salmon in the Kuskokwim Area, or for summer chum salmon in the Yukon Area, as a direct consequence of the regulation changes in the Area M June fishery.

Productivity for some of these salmon stocks has been low in recent years, and weak returns have posed a hardship in terminal areas. Given the available information, the level of confidence in providing for the subsistence priority on Federal public lands in 2004 is greatest for Bristol Bay sockeye salmon, followed by Kuskokwim Area chum salmon, and then by Yukon Area summer chum salmon. There will, of course, be greater clarity on status of the runs and fisheries during and after the season in the terminal areas. However, even then, we will not have the information needed to attribute, for any run shortfalls that may occur, the component of the cause that may be due to downturns in natural productivity, and the component that may be due to interceptions in the Area M June fishery and elsewhere.

The Federal Subsistence Board has the authority to close Federal public lands to other uses in order to provide for the subsistence priority, should that be necessary to remedy a potential failure of the subsistence priority. This authority has been further delegated to the local Federal subsistence fishery managers, so that the program can be responsive to inseason developments in a timely manner. Given the time needed to evaluate salmon runs in the terminal areas, it is not feasible that consideration could be given to assertion of extraterritorial jurisdiction on an in-season basis in the Area M June fishery.

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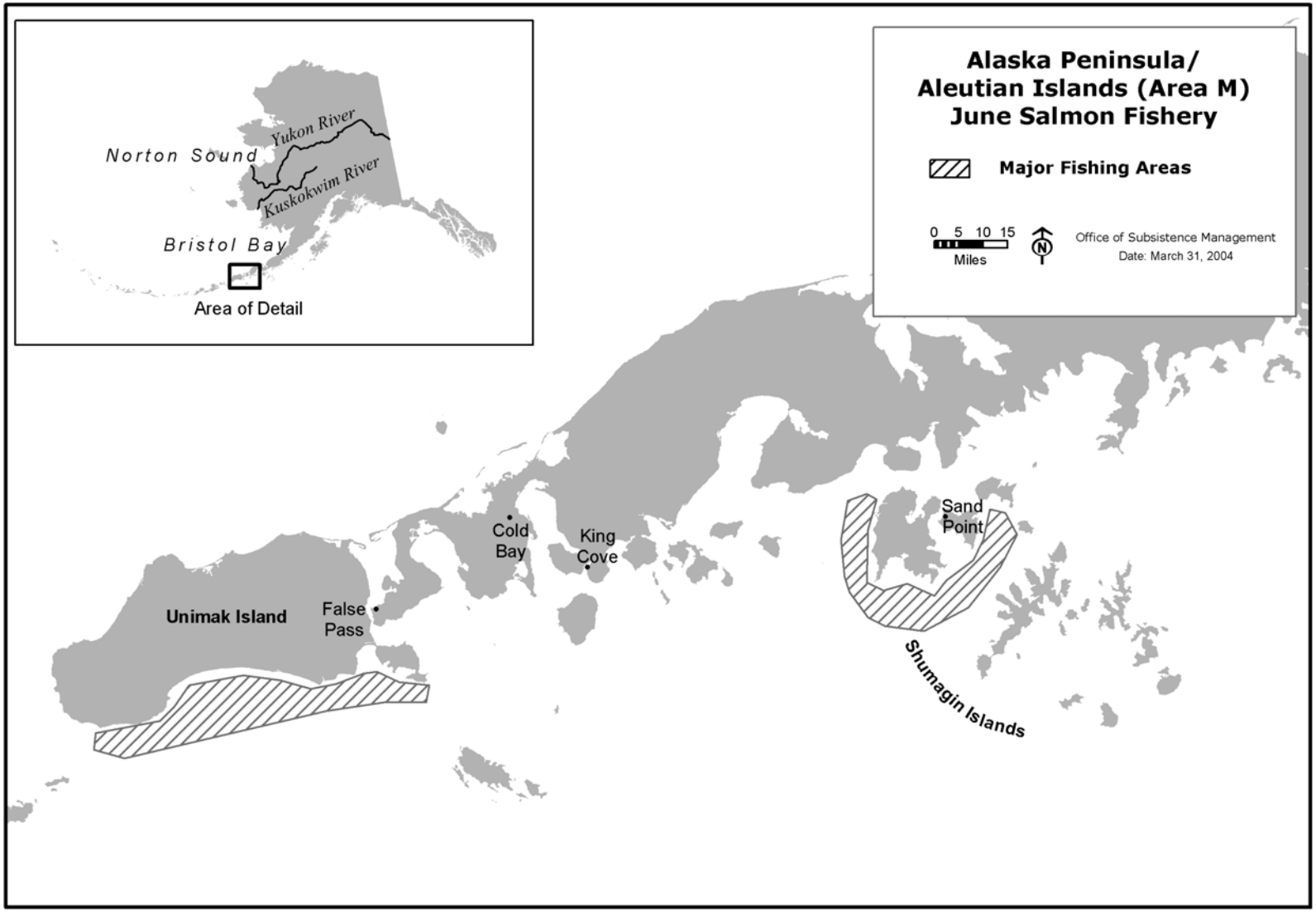
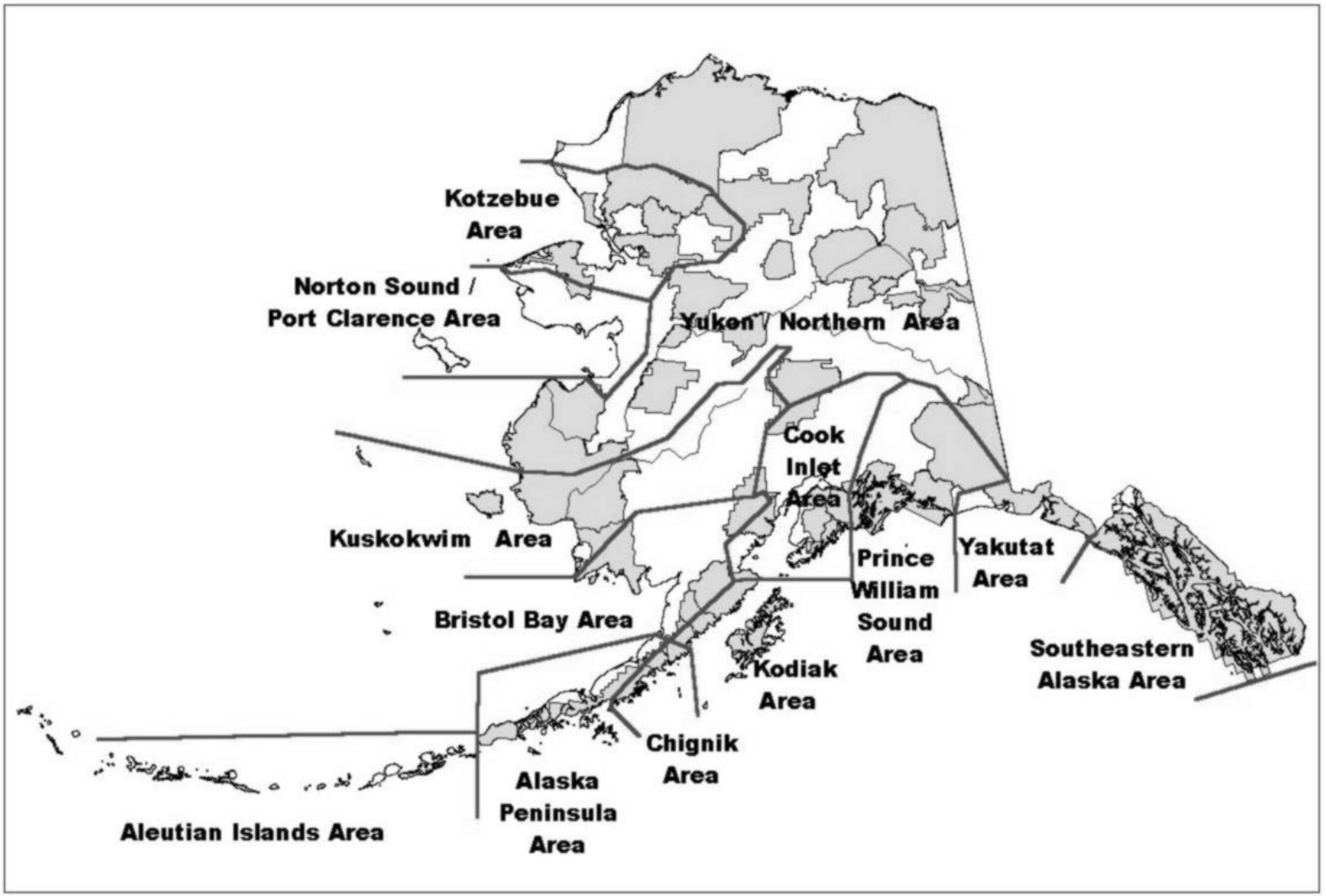

Alaska Peninsula/
Aleutian Islands (Area M)
June Salmon Fishery
Major Fishing Areas
0 5 10 15
Miles
N
Office of Subsistence Management
Date: March 31, 2004
Norton Sound
Yukon River
Kuskokwim River
Bristol Bay
Area of Detail
Cold Bay
King Cove
Sand Point
Unimak Island
False Pass
Shumagin Islands



Federal public lands in Alaska (shaded) and fishery management areas.

APPENDIX I: ADDITIONAL ISSUES NOTED CONCERNING ALASKA PENINSULA/ALEUTIAN ISLANDS COMMERCIAL SALMON FISHERIES

The foregoing report addresses central issues raised in recent petitions to the Federal subsistence management program regarding the South Unimak and Shumagin Islands June commercial salmon fishery (known as the Area M June fishery), and the provision of the subsistence priority for Bristol Bay sockeye salmon, and for Kuskokwim and Yukon Area chum salmon. Additional issues noted in the petitions are addressed here.

1) Norton Sound and Kotzebue (Arctic) salmon stocks:

The Norton Sound and Kotzebue salmon fisheries (along with the Port Clarence District located between Norton Sound and Kotzebue) form the Arctic portion of the Arctic-Yukon-Kuskokwim Region under State fishery management designations. Some of the petitions reference Norton Sound specifically, while others reference the AYK Region, and thereby, Norton Sound-Port Clarence and Kotzebue indirectly.

Federal subsistence fishery jurisdiction relevant to anadromous salmon is very limited in Norton Sound-Port Clarence. That jurisdiction consists of the upper reach of the Unalakleet River, beginning 22 miles upstream from the community of Unalakleet, designated as a Wild and Scenic River, where little to no subsistence salmon fishing takes place; and small portions of the Yukon Delta National Wildlife Refuge, to the south, and the Bering Land Bridge National Preserve, to the north, that are not associated with the Norton Sound chum salmon stocks which have been the focus of intense conservation and allocation disputes in recent decades.

Subsistence fishing for chum salmon within Federal jurisdiction in the Kotzebue area takes place primarily on the Kobuk River. Substantial changes have occurred in the Kotzebue commercial chum salmon fishery. Menard (2003) reports lack of commercial market interest and weak runs in 2002 and 2003, resulting in the lowest harvests on record: 8,000 chum in 2002 by 3 fishermen, and 26,000 chum in 2003 by 4 fishermen. For the preceding 10-year period, 1992-2001, the annual commercial harvest averaged 160,000 chum salmon by 82 fishermen (Menard 2003). Few salmon of other species are taken. Overall subsistence harvest of chum salmon in the Kotzebue area was 94,000 fish in 1999 (ADF&G 2001). Based on community of residence data, it is likely that less than 25% of the harvest was taken within Federal subsistence fishery jurisdiction. Menard (2003) reports an outlook for 2004 of 25,000 to 50,000 chum salmon available for commercial harvest, but once again an uncertain market. Given that a surplus of chum salmon above escapement needs and subsistence uses is anticipated for the Kotzebue commercial fishery, the lack of significant market interest, and the harvest and stock composition information noted elsewhere in this report for the Area M fisheries, it does not appear likely that the regulatory changes in the Area M fisheries will be a direct cause

of a failure to provide the subsistence priority for chum salmon on Federal public lands in the Kotzebue area.

2) Coho salmon:

For the period 1990-1999, subsistence harvests averaged 38,000 coho salmon annually in the Kuskokwim Area, 31,000 in the Yukon Area, and 9,000 in the Bristol Bay Area (ADF&G 2001). For the Bristol Bay Area it is likely that less than 25% of the harvest is taken within Federal subsistence fishery jurisdiction, based on community of residence data for 1999. A more substantial portion of the harvest is likely taken within Federal subsistence fishery jurisdiction in the Kuskokwim and Yukon Areas, given the extent and location of that jurisdiction. The 2004 outlook is for commercial harvest of 40,000 coho salmon in the Bristol Bay Area, 250,000 to 700,000 in the Kuskokwim Area, and up to 50,000 in the Yukon Area (Plotnick and Eggers 2004). The harvest of coho salmon in the Yukon Area is dependent on management actions taken for fall chum salmon.

Typically less than 1,000 coho salmon are harvested in the Area M June fishery. The largest annual harvests, dating back to 1970, were 13,000 cohos in 1996, and 6,000 in 1995 (Shaul 2003). It does not appear likely that the expanded fishing time in the Area M June fishery will result in a harvest of coho salmon that would cause the failure to provide the subsistence priority for this species on Federal public lands in the Bristol Bay Area, Kuskokwim Area, or Yukon Area.

During July, coho salmon are harvested in the South Alaska Peninsula fisheries incidental to effort directed at pink and chum salmon. For the 1998-2003 period, annual harvests averaged 377,000 pink, 111,000 chum, and 58,000 coho salmon during 6-21 July (excluding the Southeast District Mainland), and 1,236,000 pink, 99,000 chum, and 52,000 coho salmon during 22-31 July (excluding the Southeast District Mainland through 25 July) (Burkey 2004). Stock composition of the incidental coho salmon harvest is not known. Geiger (1991) reported that a feasibility study using scale patterns analysis was not successful, but that results suggested large numbers of coho salmon from stock groups not represented by the stock standards. Stock standards used in the study included Bristol Bay, the Kuskokwim River, and the Yukon River, as well as the Alaska Peninsula, Chignik, Kodiak, Cook Inlet, and Prince William Sound.

In February 2004, the Alaska Board of Fisheries made a regulation change, removing the 60,000 coho salmon harvest cap for non-terminal areas during the 22-31 July period in the South Alaska Peninsula fishery. This removes that cap as a constraint on management strategies directed at pink and chum salmon. Considering the scale of the incidental coho harvest, the uncertain stock composition, the low level of coho salmon subsistence harvest in Federal jurisdiction in Bristol Bay, and the outlook for commercial surpluses of coho salmon in the Bristol Bay, Kuskokwim, and Yukon Areas, it does not appear likely that this regulatory change will result in a harvest of coho salmon that would cause the failure to provide the subsistence priority for coho salmon on Federal public lands in the Bristol Bay, Kuskokwim, or Yukon Areas.

3) South Alaska Peninsula fishery July interceptions of chum salmon:

As noted above, for the 1998-2003 period, annual harvests in the South Alaska Peninsula fishery averaged 111,000 chum salmon during 6-21 July (excluding the Southeast District Mainland), and 99,000 chum salmon during 22-31 July (excluding the Southeast District Mainland through 25 July) (Burkey 2004). Crane and Seeb (2000) conducted a genetics study on the South Alaska Peninsula post-June fishery in 1996-1997. They reported that the "Northwest Alaska Summer" stock group was not a major component of the post-June fishery. Instead, they found that the majority of the chum salmon were bound for Alaska Peninsula and Kodiak Island spawning areas, with the remainder primarily originating from Southeast Alaska and the Pacific Northwest. Estimates for Yukon River fall chum salmon contributions were not significantly different from zero.

Given this information, it does not appear likely that removal of the cap on incidental coho salmon harvest in non-terminal areas during 22-31 July in the South Alaska Peninsula fishery will result in a harvest of chum salmon that would cause the failure to provide the subsistence priority for chum salmon on Federal public lands in the Kuskokwim or Yukon Areas.

4) Sharing in the burden of conservation:

Allocating fishing opportunities and conservation burdens among State-managed fisheries is a State function, not a role for the Federal subsistence management program. It should be understood that this assessment is not meant to suggest concurrence with the allocation decisions by the Alaska Board of Fisheries.

5) Accuracy in the accounting of chum salmon harvests in the Area M fisheries:

Harvest accounting and enforcement of fishing regulations in State-managed fisheries is a State function, not a role for the Federal subsistence management program.

6) Establishment of appropriate spawning escapement goals for AYK salmon:

The Alaska Department of Fish and Game has been in the lead in the establishment of salmon escapement goals. Federal staff are involved on an informal basis, and a joint protocol between ADF&G and the Federal subsistence management program is in development. While there may be opportunities to address information gaps or improve methods, the setting of salmon escapement goals in the AYK Region is not a basis for extension of extraterritorial jurisdiction to the management of commercial salmon fisheries in Area M.

Appendix II. History of regulations for the Area M June commercial salmon fishery, 1962-2003 (Adapted from Shaul 2003).

Year	South Unimak	Shumagin Islands
1962-66	5 days per week	5 days per week
1967-70	7 days per week	7 days per week
1971-72	6:00 A.M. Monday - 6:00 A.M. Saturday	7 days per week
1973[a]	Four 13 hour fishing periods per week	Four 13 hour fishing periods per week.
1974	No fishery	No fishery
1975-83[b]	6.8% of predicted Bristol Bay catch.	1.5% of predicted Bristol Bay catch.
1984-89[b]	No more than 96 hours per 7 day period and no more than 72 hours of consecutive fishing time in each fishery (windows).	
1986[b]	6.8% allocation minus June 26-30 segment Windows No fishing before June 11	1.5% allocation minus June 26-30 segment Windows No fishing before June 11
	A 400,000 chum salmon ceiling placed on both fisheries combined.	
1987[b]	Same as during 1984-85 for both fisheries.	
1988-89[b]	6.8% of predicted Bristol Bay catch Windows	1.5% of predicted Bristol Bay catch Windows
	A 500,000 chum salmon ceiling placed on both fisheries combined.	

-Continued-

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Dates	South Unimak	Shumagin Islands
June 1 - 11	5%	9%
June 12 - 18	29%	28%
June 19 - 25	51%	41%
June 26 - 30	15%	22%
	100%	100%

1990-91 The chum salmon ceiling was increased from 500,000 to 600,000.

The "Window Regulations" implemented in 1984 to limit the amount of fishing time that could be allowed were deleted.

The season was delayed until June 13 and the time period sockeye allocations for both fisheries were changed as follows:

June 13-18	35%
June 19-25	45%
June 26-30	20%

The gear depth for seines was limited to 375 meshes of which mesh size may not exceed 3-1/2 inches except for the first 25 meshes above the lead line which may not exceed 7 inches.

The gear depth on gillnets along the South Peninsula was limited to no more than 90 meshes.

Seine leads may not exceed 150 fathoms for the entire Alaska Peninsula.

1992-93 The chum salmon ceiling was increased from 600,000 to 700,000 fish. Fishing time for set gillnet gear could not be less than 16 hours unless a 16 hour period would result in a harvest that exceeded the cap for chum salmon. The other regulations were the same as in effect for 1990 and 1991.

1994 Sockeye salmon time period allocations eliminated. ADF&G given flexibility to open fishery prior to June 13 if sockeye to chum salmon ratios are favorable.

-Continued-

Appendix II (page 3 of 4).

1995-97	The amount of fishing time for seine and drift gillnet gear after June 24 is limited if the sockeye to chum salmon ratio is two to one or less.
	The Board of Fisheries stated it's intent that remaining under the chum salmon harvest ceiling supersedes attempts to reach the sockeye guideline harvest levels.
	The fisheries could not be extended into July regardless of weather during late June.
	Fishery cannot begin prior to June 11.
	Removed mesh size requirements for gillnets.
1998-00	The chum salmon ceiling was lowered from 700,000 to a "floating cap" that can range between 350,000 and 650,000.
	A commercial fishery for all gear types may open on June 10 if sockeye to chum salmon ratios are favorable.
	In the Unimak District the shoreward end of a set gillnet must be within one half mile of shore.
	All salmon caught must be retained and reported.
	Use of aircraft to locate salmon prohibited for the entire Alaska Peninsula for the entire season
200l-2003	Eliminated the sockeye salmon guideline harvest levels.
	Eliminated the chum salmon guideline harvest levels.
	Limited fishing time to no more than 16 hours per day by any gear group.
	Limited total fishing time by seine and drift gillnet gear to no more than 48 hours in a floating seven day period with no more than two 16-hour periods on consecutive days in any seven day period.

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Appendix II (page 4 of 4).

From June 10 through June 24 in the South Unimak and/or Shumagin Islands fisheries, set gillnet gear may fish on consecutive days for 16-hour periods as long as the set gillnet sockeye to chum salmon ratios in that fishery are equal to or greater than the recent 10-year average for that fishery. If the set gillnet sockeye to chum salmon ratio falls below the recent 10-year average in either fishery, that fishery will be closed for one period. From June 10 through June 24, daily fishing periods for set gillnet gear will be from 6:00 AM until 10:00 PM.

Purse seine and drift gillnet fishing periods through June 24 will occur at the same time in the South Unimak and Shumagin Islands fisheries.

After June 24, in either the South Unimak or Shumagin Islands fishery if the ratio of sockeye to chum salmon by all gear combined is two to one or less on any day, the next fishing period shall be of six hours duration for all gear in that fishery. If the sockeye to chum salmon ratio is two or greater, a six hour fishing period can be extended to a maximum of 16 hours. The South Unimak or Shumagin Islands fishery shall close for all gear groups if the ratio of sockeye to chum salmon is two to one or less for two consecutive fishing periods.

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[a] Both fisheries were closed in 1973 by emergency order during June 25-28 because of indications of the Bristol Bay run being below escapement requirements.

[b] Each sockeye allocation is broken down into time period guideline harvest levels.